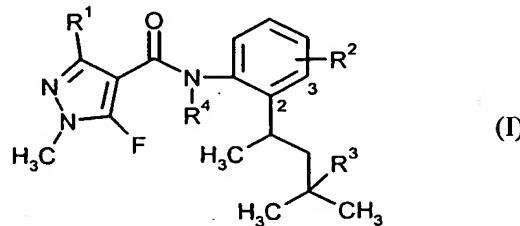


Patent claims

1. N-substituted pyrazolylcarboxanilides of the formula (I)



5 in which

R¹ represents methyl, trifluoromethyl or difluoromethyl,

R² represents hydrogen, fluorine, chlorine, methyl or trifluoromethyl,

a) R³ represents hydrogen,

10 R⁴ represents C₁-C₈-alkyl, C₁-C₆-alkylsulphanyl, C₁-C₆-alkylsulphonyl, C₁-C₄-alkoxy-C₁-C₄-alkyl, C₃-C₈-cycloalkyl; C₁-C₆-haloalkyl, C₁-C₄-haloalkylthio, C₁-C₄-haloalkylsulphanyl, C₁-C₄-haloalkylsulphonyl, halo-C₁-C₄-alkoxy-C₁-C₄-alkyl, C₃-C₈-halocycloalkyl having in each case 1 to 9 fluorine, chlorine and/or bromine atoms; formyl, formyl-C₁-C₃-alkyl, (C₁-C₃-alkyl)carbonyl-C₁-C₃-alkyl, (C₁-C₃-alkoxy)carbonyl-C₁-C₃-alkyl; halo-(C₁-C₃-alkyl)carbonyl-C₁-C₃-alkyl, halo-(C₁-C₃-alkoxy)carbonyl-C₁-C₃-alkyl having in each case 1 to 13 fluorine, chlorine and/or bromine atoms; (C₃-C₈-cycloalkyl)carbonyl; (C₃-C₈-halocycloalkyl)carbonyl having 1 to 9 fluorine, chlorine and/or bromine atoms; or -C(=O)C(=O)R⁵, -CONR⁶R⁷ or -CH₂NR⁸R⁹,

20 b) R³ represents halogen, C₁-C₈-alkyl or C₁-C₈-haloalkyl,

25 R⁴ represents C₁-C₈-alkyl, C₁-C₆-alkylsulphanyl, C₁-C₆-alkylsulphonyl, C₁-C₄-alkoxy-C₁-C₄-alkyl, C₃-C₈-cycloalkyl; C₁-C₆-haloalkyl, C₁-C₄-haloalkylthio, C₁-C₄-haloalkylsulphanyl, C₁-C₄-haloalkylsulphonyl, halo-C₁-C₄-alkoxy-C₁-C₄-alkyl, C₃-C₈-halocycloalkyl having in each case 1 to 9 fluorine, chlorine and/or bromine atoms; formyl, formyl-C₁-C₃-alkyl, (C₁-C₃-alkyl)carbonyl-C₁-C₃-alkyl, (C₁-C₃-alkoxy)carbonyl-C₁-C₃-alkyl; halo-(C₁-C₃-alkyl)carbonyl-C₁-C₃-alkyl, halo-(C₁-C₃-alkoxy)carbonyl-C₁-C₃-alkyl having in each case 1 to 13 fluorine, chlorine and/or bromine atoms;

30 (C₁-C₈-alkyl)carbonyl, (C₁-C₈-alkoxy)carbonyl, (C₁-C₄-alkoxy-C₁-C₄-alkyl)carbonyl, (C₃-C₈-cycloalkyl)carbonyl; (C₁-C₆-haloalkyl)carbonyl, (C₁-C₆-haloalkoxy)carbonyl, (halo-C₁-C₄-alkoxy-C₁-C₄-alkyl)carbonyl, (C₃-C₈-halo-

cycloalkyl)carbonyl having in each case 1 to 9 fluorine, chlorine and/or bromine atoms; or $-\text{C}(=\text{O})\text{C}(=\text{O})\text{R}^5$, $-\text{CONR}^6\text{R}^7$ or $-\text{CH}_2\text{NR}^8\text{R}^9$,

5 R^5 represents hydrogen, $\text{C}_1\text{-C}_8\text{-alkyl}$, $\text{C}_1\text{-C}_8\text{-alkoxy}$, $\text{C}_1\text{-C}_4\text{-alkoxy-C}_1\text{-C}_4\text{-alkyl}$, $\text{C}_3\text{-C}_8\text{-cycloalkyl}$; $\text{C}_1\text{-C}_6\text{-haloalkyl}$, $\text{C}_1\text{-C}_6\text{-haloalkoxy}$, halo- $\text{C}_1\text{-C}_4\text{-alkoxy-C}_1\text{-C}_4\text{-alkyl}$, $\text{C}_3\text{-C}_8\text{-halocycloalkyl}$ having in each case 1 to 9 fluorine, chlorine and/or bromine atoms,
10 R^6 and R^7 independently of one another, each represent hydrogen, $\text{C}_1\text{-C}_8\text{-alkyl}$, $\text{C}_1\text{-C}_4\text{-alkoxy-C}_1\text{-C}_4\text{-alkyl}$, $\text{C}_3\text{-C}_8\text{-cycloalkyl}$; $\text{C}_1\text{-C}_8\text{-haloalkyl}$, halo- $\text{C}_1\text{-C}_4\text{-alkoxy-C}_1\text{-C}_4\text{-alkyl}$, $\text{C}_3\text{-C}_8\text{-halocycloalkyl}$ having in each case 1 to 9 fluorine, chlorine and/or bromine atoms,
15 R^6 and R^7 furthermore together with the nitrogen atom to which they are attached form a saturated heterocycle having 5 to 8 ring atoms which is optionally mono- or polysubstituted by identical or different substituents from the group consisting of halogen and $\text{C}_1\text{-C}_4\text{-alkyl}$, where the heterocycle may contain 1 or 2 further non-adjacent heteroatoms from the group consisting of oxygen, sulphur and NR^{10} ,
20 R^8 and R^9 independently of one another, represent hydrogen, $\text{C}_1\text{-C}_8\text{-alkyl}$, $\text{C}_3\text{-C}_8\text{-cycloalkyl}$; $\text{C}_1\text{-C}_8\text{-haloalkyl}$, $\text{C}_3\text{-C}_8\text{-halocycloalkyl}$ having in each case 1 to 9 fluorine, chlorine and/or bromine atoms,
25 R^8 and R^9 furthermore together with the nitrogen atom to which they are attached form a saturated heterocycle having 5 to 8 ring atoms which is optionally mono- or polysubstituted by identical or different substituents from the group consisting of halogen and $\text{C}_1\text{-C}_4\text{-alkyl}$, where the heterocycle may contain 1 or 2 further non-adjacent heteroatoms from the group consisting of oxygen, sulphur and NR^{10} ,
30 R^{10} represents hydrogen or $\text{C}_1\text{-C}_6\text{-alkyl}$.

2. N-substituted pyrazolylcarboxanilides of the formula (I) according to Claim 1 in which

25 R^1 represents methyl, trifluoromethyl or difluoromethyl,
 R^2 represents hydrogen, fluorine, chlorine, methyl or trifluoromethyl,
30 a) R^3 represents hydrogen,
 R^4 represents $\text{C}_1\text{-C}_6\text{-alkyl}$, $\text{C}_1\text{-C}_4\text{-alkylsulphanyl}$, $\text{C}_1\text{-C}_4\text{-alkylsulphonyl}$, $\text{C}_1\text{-C}_3\text{-alkoxy-C}_1\text{-C}_3\text{-alkyl}$, $\text{C}_3\text{-C}_6\text{-cycloalkyl}$; $\text{C}_1\text{-C}_4\text{-haloalkyl}$, $\text{C}_1\text{-C}_4\text{-haloalkylthio}$, $\text{C}_1\text{-C}_4\text{-haloalkylsulphanyl}$, $\text{C}_1\text{-C}_4\text{-haloalkylsulphonyl}$, halo- $\text{C}_1\text{-C}_3\text{-alkoxy-C}_1\text{-C}_3\text{-alkyl}$, $\text{C}_3\text{-C}_6\text{-halocycloalkyl}$ having in each case 1 to 9 fluorine, chlorine and/or bromine atoms; formyl, formyl- $\text{C}_1\text{-C}_3\text{-alkyl}$, $(\text{C}_1\text{-C}_3\text{-alkyl})\text{carbonyl-C}_1\text{-C}_3\text{-alkyl}$, $(\text{C}_1\text{-C}_3\text{-alkoxy})\text{carbonyl-C}_1\text{-C}_3\text{-alkyl}$; halo- $(\text{C}_1\text{-C}_3\text{-alkyl})\text{carbonyl-C}_1\text{-C}_3\text{-alkyl}$, halo- $(\text{C}_1\text{-C}_3\text{-alkoxy})\text{carbonyl-C}_1\text{-C}_3\text{-alkyl}$ having in each case 1 to 13 fluorine, chlorine and/or bromine atoms;
35

(C₃-C₆-cycloalkyl)carbonyl; (C₃-C₆-halocycloalkyl)carbonyl having 1 to 9 fluorine, chlorine and/or bromine atoms; or -C(=O)C(=O)R⁵, -CONR⁶R⁷ or -CH₂NR⁸R⁹,

5 b) R³ represents fluorine, chlorine, bromine, iodine, C₁-C₆-alkyl or C₁-C₆-haloalkyl having 1 to 13 fluorine, chlorine and/or bromine atoms,

10 R⁴ represents C₁-C₆-alkyl, C₁-C₄-alkylsulphanyl, C₁-C₄-alkylsulphonyl, C₁-C₃-alkoxy-C₁-C₃-alkyl, C₃-C₆-cycloalkyl; C₁-C₄-haloalkyl, C₁-C₄-haloalkylthio, C₁-C₄-haloalkylsulphanyl, C₁-C₄-haloalkylsulphonyl, halo-C₁-C₃-alkoxy-C₁-C₃-alkyl, C₃-C₆-halocycloalkyl having in each case 1 to 9 fluorine, chlorine and/or bromine atoms; formyl, formyl-C₁-C₃-alkyl, (C₁-C₃-alkyl)carbonyl-C₁-C₃-alkyl, (C₁-C₃-alkoxy)carbonyl-C₁-C₃-alkyl; halo-(C₁-C₃-alkyl)carbonyl-C₁-C₃-alkyl, halo-(C₁-C₃-alkoxy)carbonyl-C₁-C₃-alkyl having in each case 1 to 13 fluorine, chlorine and/or bromine atoms;

15 (C₁-C₆-alkyl)carbonyl, (C₁-C₆-alkoxy)carbonyl, (C₁-C₃-alkoxy-C₁-C₃-alkyl)-carbonyl, (C₃-C₆-cycloalkyl)carbonyl; (C₁-C₄-haloalkyl)carbonyl, (C₁-C₄-haloalkoxy)carbonyl, (halo-C₁-C₃-alkoxy-C₁-C₃-alkyl)carbonyl, (C₃-C₆-halocycloalkyl)carbonyl having in each case 1 to 9 fluorine, chlorine and/or bromine atoms; or -C(=O)C(=O)R⁵, -CONR⁶R⁷ or -CH₂NR⁸R⁹,

20 R⁵ represents hydrogen, C₁-C₆-alkyl, C₁-C₄-alkoxy, C₁-C₃-alkoxy-C₁-C₃-alkyl, C₃-C₆-cycloalkyl; C₁-C₄-haloalkyl, C₁-C₄-haloalkoxy, halo-C₁-C₃-alkoxy-C₁-C₃-alkyl, C₃-C₆-halocycloalkyl having in each case 1 to 9 fluorine, chlorine and/or bromine atoms,

25 R⁶ and R⁷ independently of one another, each represent hydrogen, C₁-C₆-alkyl, C₁-C₃-alkoxy-C₁-C₃-alkyl, C₃-C₆-cycloalkyl; C₁-C₄-haloalkyl, halo-C₁-C₃-alkoxy-C₁-C₃-alkyl, C₃-C₆-halocycloalkyl having in each case 1 to 9 fluorine, chlorine and/or bromine atoms,

30 R⁶ and R⁷ furthermore together with the nitrogen atom to which they are attached form a saturated heterocycle having 5 to 8 ring atoms which is optionally mono- to tetrasubstituted by identical or different substituents from the group consisting of halogen and C₁-C₄-alkyl, where the heterocycle may contain 1 or 2 further non-adjacent heteroatoms from the group consisting of oxygen, sulphur and NR¹⁰,

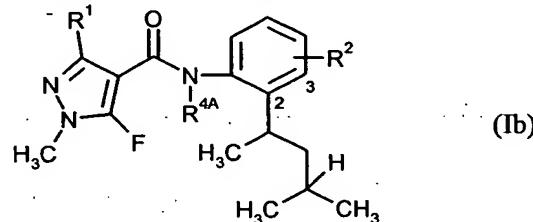
35 R⁸ and R⁹ independently of one another, represent hydrogen, C₁-C₆-alkyl, C₃-C₆-cycloalkyl; C₁-C₄-haloalkyl, C₃-C₆-halocycloalkyl having in each case 1 to 9 fluorine, chlorine and/or bromine atoms,

R⁸ and R⁹ furthermore together with the nitrogen atom to which they are attached form a saturated heterocycle having 5 to 8 ring atoms which is optionally mono- to tetrasubstituted by identical or different substituents from the group consisting of

halogen and C₁-C₄-alkyl, where the heterocycle may contain 1 or 2 further non-adjacent heteroatoms from the group consisting of oxygen, sulphur and NR¹⁰;

R¹⁰ represents hydrogen or C₁-C₄-alkyl.

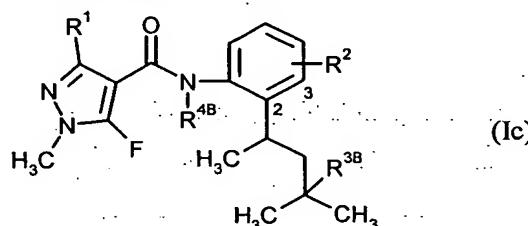
5 3. N-substituted pyrazolylcarboxanilides of the formula (Ib)



in which

R^{4A} represents C₁-C₈-alkyl, C₁-C₆-alkylsulphanyl, C₁-C₆-alkylsulphonyl, C₁-C₄-alkoxy-C₁-C₄-alkyl, C₃-C₈-cycloalkyl; C₁-C₆-haloalkyl, C₁-C₄-haloalkylthio, C₁-C₄-haloalkylsulphanyl, C₁-C₄-haloalkylsulphonyl, halo-C₁-C₄-alkoxy-C₁-C₄-alkyl, C₃-C₈-haloalkyl having in each case 1 to 9 fluorine, chlorine and/or bromine atoms; formyl, formyl-C₁-C₃-alkyl, (C₁-C₃-alkyl)carbonyl-C₁-C₃-alkyl, (C₁-C₃-alkoxy)carbonyl-C₁-C₃-alkyl; halo-(C₁-C₃-alkyl)carbonyl-C₁-C₃-alkyl, halo-(C₁-C₃-alkoxy)carbonyl-C₁-C₃-alkyl having in each case 1 to 13 fluorine, chlorine and/or bromine atoms; (C₃-C₈-cycloalkyl)carbonyl; (C₃-C₈-halocycloalkyl)carbonyl having 1 to 9 fluorine, chlorine and/or bromine atoms; or -C(=O)C(=O)R⁵, -CONR⁶R⁷ or -CH₂NR⁸R⁹, and R¹, R², R⁵, R⁶, R⁷, R⁸ and R⁹ are as defined in Claim 1.

4. N-substituted pyrazolylcarboxanilides of the formula (Ic)



in which

R^{3B} represents halogen, C₁-C₈-alkyl or C₁-C₈-haloalkyl,

R^{4B} represents C₁-C₈-alkyl, C₁-C₆-alkylsulphanyl, C₁-C₆-alkylsulphonyl, C₁-C₄-alkoxy-C₁-C₄-alkyl, C₃-C₈-cycloalkyl; C₁-C₆-haloalkyl, C₁-C₄-haloalkylthio, C₁-C₄-haloalkylsulphanyl, C₁-C₄-haloalkylsulphonyl, halo-C₁-C₄-alkoxy-C₁-C₄-alkyl, C₃-C₈-halocycloalkyl having in each case 1 to 9 fluorine, chlorine and/or bromine atoms; formyl, formyl-C₁-C₃-alkyl, (C₁-C₃-alkyl)carbonyl-C₁-C₃-alkyl, (C₁-C₃-alkoxy)carbonyl-C₁-

C₃-alkyl; halo-(C₁-C₃-alkyl)carbonyl-C₁-C₃-alkyl, halo-(C₁-C₃-alkoxy)carbonyl-C₁-C₃-alkyl having in each case 1 to 13 fluorine, chlorine and/or bromine atoms; (C₁-C₈-alkyl)carbonyl, (C₁-C₈-alkoxy)carbonyl, (C₁-C₄-alkoxy-C₁-C₄-alkyl)carbonyl, (C₃-C₈-cycloalkyl)carbonyl; (C₁-C₆-haloalkyl)carbonyl, (C₁-C₆-haloalkoxy)carbonyl, (halo-C₁-C₄-alkoxy-C₁-C₄-alkyl)carbonyl, (C₃-C₈-halocycloalkyl)carbonyl having in each case 1 to 9 fluorine, chlorine and/or bromine atoms; or -C(=O)C(=O)R⁵, -CONR⁶R⁷ or -CH₂NR⁸R⁹,

and R¹, R², R⁵, R⁶, R⁷, R⁸ and R⁹ are as defined in Claim 1.

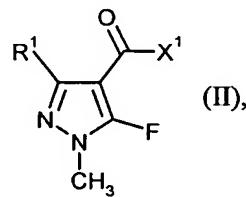
10 5. N-substituted pyrazolylcarboxanilides of the formula (I) according to Claim 1 in which R⁴ represents formyl.

6. N-substituted pyrazolylcarboxanilides of the formula (I) according to Claim 1 in which R⁴ represents -C(=O)C(=O)R⁵ and R⁵ is as defined in Claim 1.

15

7. Process for preparing compounds of the formula (I) according to Claim 1, characterized in that

a) carboxylic acid derivatives of the formula (II)



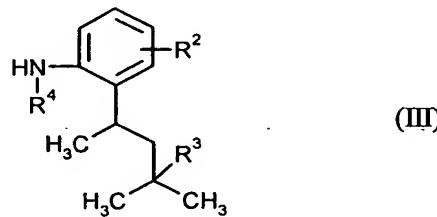
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in which

R¹ is as defined above and

X¹ represents halogen or hydroxyl

are reacted with an aniline derivative of the formula (III)



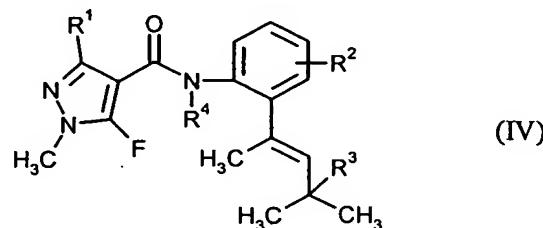
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in which R², R³ and R⁴ are as defined above,

if appropriate in the presence of a catalyst, if appropriate in the presence of a condensing agent, if appropriate in the presence of an acid binder and if appropriate in the presence of a diluent,

or

b) pyrazolylcarboxanilides of the formula (IV)

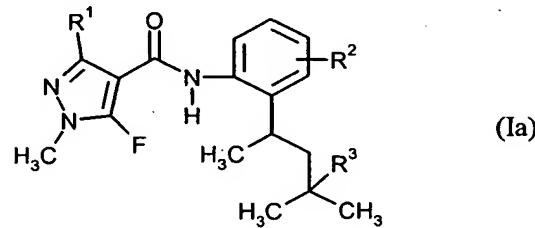


in which R¹, R², R³ and R⁴ are as defined above

are hydrogenated, if appropriate in the presence of a diluent and if appropriate in the
5. presence of a catalyst,

or

c) pyrazolylcarboxanilides of the formula (Ia)



in which R¹, R² and R³ are as defined above

10. are reacted with halides of the formula (V)



in which

R⁴ is as defined above and

X² represents chlorine, bromine or iodine

15. in the presence of a base and in the presence of a diluent.

8. Compositions for controlling unwanted microorganisms, characterized in that they comprise at least one N-substituted pyrazolylcarboxanilide of the formula (I) according to Claim 1, in addition to extenders and/or surfactants.

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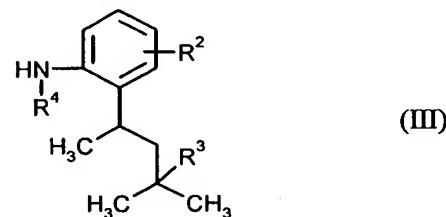
9. Use of N-substituted pyrazolylcarboxanilides of the formula (I) according to Claim 1 for controlling unwanted microorganisms.

25

10. Method for controlling unwanted microorganisms, characterized in that N-substituted pyrazolylcarboxanilides of the formula (I) according to Claim 1 are applied to the microorganisms and/or their habitat.

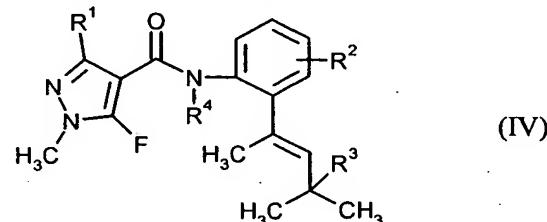
11. Process for preparing compositions for controlling unwanted microorganisms, characterized in that N-substituted pyrazolylcarboxanilides of the formula (I) according to Claim 1 are mixed with extenders and/or surfactants.

5 12. Aniline derivatives of the formula (III)



in which R², R³ and R⁴ are as defined in Claim 1.

13. Pyrazolylcarboxanilides of the formula (IV)



10

in which R¹, R², R³ and R⁴ are as defined in Claim 1.